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Avalanche Notes

U.S. Forest Service
Westwide Avalanche Network

INT FOREST & RANGE
EXPERIMENT STATION

MAY 23 1985

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April 1985

By the time April arrived, winter had nothing left and ended with a whimper in the West. Almost all sites recorded below-normal snowfall for the month. In Alaska, Alyeska reported 93% of normal...in the Cascades of Washington, Crystal Mtn, 62%; Mt. Rainier, 74%; and Stevens Pass, 130%...in the Sierra of California, Alpine Meadows, 35%...in the Wasatch of Utah, Alta, 51%; and Snowbird, 36%...and in Colorado, Winter Park, 64%; Berthoud Pass, 89%; and Gothic, 140%. A few storms were worth noting: Alyeska recorded 30 inches of snowfall on the 7th-9th, and 32 inches on the 15th-17th; Stevens Pass received 20 inches on the 23rd-24th; Mt. Rainier measured 42 inches on the 22nd-27th; and Marvine Ranch, CO got 28 inches on the 19th-21st.

There were no major wet-slab cycles and only one accident of note in April. On the 1st, a slide path above the Ruby Trust Mine in the San Juan Mtns of Colorado was bombed and ran extra large. It struck the mine building and caused damage estimated at \$60,000.

May 1985

Two serious accidents occurred in early May, in time to make this final edition of Avalanche Notes. On the 3rd at Gothic, CO, a ski mountaineer (skis off at the time) released a wet slab that carried him down some 800 feet in elevation and over two cliff bands. His injuries were severe: a crushed pelvis, multiple breaks of the wrist, and possible breaks of the femur and ribs. On the 12th on Whitehorse Mtn, WA, four climbers were caught in a wet-slab avalanche. Two were partly buried and one totally buried except for fingertips. These three were rescued unharmed, but the fourth--a woman--could not be found. The following day a probe line located her body beneath 6 feet of snow. This was the 13th avalanche death of the season. Table 1 summarizes this winter's avalanche statistics through mid-May.

Winter Summary

Table 2 compares avalanche statistics for the last 15 years. The winter of 84-85 was below average in number of avalanches reported and in almost all accident categories. Injuries--17--were above normal and deaths--13--were right on the 15-year average.

Table 3 presents snowfall totals for all regularly reporting Westwide sites. The percent-of-normal figures show that 84-85 wound up on the dry side in virtually every area of the mountain West. Only four sites--all in Colorado--managed above-normal snowfalls. All others achieved only 63-96% of normal.

Looking Ahead

Avalanche Notes will return in November. There are two events scheduled for late fall that many of you will be interested in. On October 25-27 an Avalanche Weather Seminar is scheduled for Snowbird, UT. This seminar is sponsored by the American Avalanche Institute and The Avalanche Review, and all recipients of Avalanche Notes will receive further notice of this seminar. And the 1985 National Avalanche School is scheduled for Reno, NV on November 3-7. Further information can be obtained by writing to the National Avalanche Foundation, 2638 Dapplegray Lane, Walnut Creek, CA 94596-6699.

May you all enjoy a warm and safe summer.

Table 1: Regional Avalanche Summary, Winter of 1984-85

Total Avalanches Reported			Damage Summary - This Winter								
Area	This month	This winter	People				Vehicles		Avalanche Damaged		
			C	B	I	K	B	D	Bldgs	Lifts	Misc
Central and So. Rockies	177	2441	42	14	4	5	4	0	4	0	0
Intermountain	42	1520	28	15	5	5	0	0	0	0	0
West Coast	99	2942	43	12	8	3	4	0	0	0	2
All Areas	318	6903	113	41	17	13	8	0	4	0	2

Table 2: Annual Avalanche Summaries for the U.S.

WINTER	AVALANCHES	PEOPLE				VEHICLES		AVALANCHE DAMAGED			ESTIMATED PROPERTY DAMAGE
		C	B	I	K	B	D	Bldgs	Lifts	Misc	
1984-85	6,903	113	41	17	13	8	0	4	0	2	\$ 80,000
1983-84	7,161	122	42	20	14	27	7	4	0	6	140,000
1982-83	11,822	174	68	20	14	32	11	5	4	3	80,000
1981-82	10,102	212	78	16	19	77	25	10	8	8	1,700,000
1980-81	5,695	131	58	7	23	5	1	0	2	0	10,000
1979-80	10,669	136	44	9	6	34	16	7	1	19	650,000
1978-79	9,420	159	62	16	11	54	24	5	1	4	1,250,000
1977-78	11,151	155	71	16	17	19	5	5	3	2	300,000
1976-77	3,764	98	35	13	10	3	0	2	0	0	500
1975-76	7,905	177	81	15	17	13	6	1	1	1	100,000
1974-75	10,387	195	79	9	22	30	5	4	1	2	150,000
1973-74	11,782	159	92	13	13	54	16	11	2	7	300,000
1972-73	9,965	92	35	3	5	11	1	4	2	2	200,000
1971-72	6,975	168	63	17	5	21	4	11	2	12	300,000
1970-71	4,066	58	46	10	12	19	3	13	2	8	500,000
AVERAGE	8,518	143	59	13	13	28	8	6	2	5	\$ 384,000

Table 3: Snowfall Totals for the Winter of 1984-85 (with percents of normal for sites with 10 or more years of record)

State	Dec-Mar (inches)	% of Normal	Nov-Apr (inches)	% of Normal
<u>Alaska</u>				
Alyeska	275	77%	393	
Eaglecrest	248			
<u>California</u>				
Alpine Meadows	225	86%	272	90%
Squaw Valley	162	80%	251	
Sugar Bowl	249			
<u>Colorado</u>				
Arapahoe Basin	146			
Aspen Highlands	206			
Aspen Mtn.	194	116%		
Bear Lake	136			
Beaver Creek	231			
Berthoud Pass	183	90%	285	94%
Breckenridge	190	90%		
Copper Mtn.	160	89%		
Crested Butte	156	88%		
Gothic	235	91%	316	95%
Loveland Pass	131	86%		
Marvine Ranch	123			
Mary Jane	242			
Monarch	195	110%	253	
Purgatory	233			
Sunlight	189			
Telluride	183			
Vail	266	103%		
Winter Park	131	86%	192	86%
Wolf Creek	364	120%		
<u>Idaho</u>				
Schweitzer Basin	131			
Sun Valley	106			
<u>Montana</u>				
Big Sky	158			
Bridger Bowl	224	92%		
<u>New Mexico</u>				
Taos	162	96%		
<u>Oregon</u>				
Mt. Hood Meadows	291	77%		
Multnomah	241			
<u>Utah</u>				
Snowbird	304	84%	428	87%
Solitude	217			
<u>Washington</u>				
Crystal Mtn. 1	187	63%		
Crystal Mtn. 2	235	66%		
Mt. Rainier-Paradise	410	82%	622	88%
Snoqualmie Pass	300			
Stevens Pass	283	80%		
Stevens Pass US 2	258		428	
<u>Wyoming</u>				
Grand Targhee	183			
Jackson Hole	244	77%		
Teton Pass	206			

Table 4: Avalanche Totals for the Winter of 1984-85

<u>Ski Areas</u>		<u>No.</u>	<u>Highways, Mines, National Parks and Miscellaneous Areas</u>		<u>No.</u>
1.	Alpine Meadows, CA	732	1.	Gothic, Co	327
2.	Bridger Bowl, MT	396	2.	Red Mtn. Pass, CO	303
3.	Taos, NM	371	3.	Loveland Pass, CO	206
4.	Big Sky, MT	333	4.	Berthoud Pass Research Area, CO	174
5.	Crystal Mtn, WA	301	5.	Stevens Pass U.S.2, WA	139
6.	Alyeska, AK	298	6.	Snoqualmie Pass I-90, WA	131
7.	Squaw Valley, CA	297	7.	San Juan Mtns, CO	55
8.	Snowbird, UT	244	8.	Urad-Henderson Mine, CO	31
9.	Mt. Hood Meadows, OR	235	9.	Mt. Rainier Nat. Park, WA	30
10.	Kirkwood Meadows, CA	229	10.	Teton Pass, WY	18
11.	Mammoth Mtn, CA	218	10.	Wolf Creek Pass, CO	18
12.	Jackson Hole, WY	213	12.	Wasatch Range, UT	14
13.	Alta, UT	190	13.	Berthoud Pass U.S. 40, CO	13
14.	Aspen Snowmass, CO	175	14.	Alaska Backcountry	11
15.	Mt. Rose/Slide Mtn, NV	154	15.	Silverton, CO	9
16.	Aspen Highlands, CO	134	16.	Colorado Highway 110	6
17.	Breckenridge, CO	108	17.	Elk Mtns, CO	3
18.	Arapahoe Basin, CO	95	17.	Lizard Head Pass, CO	3
18.	Loveland Basin, CO	95	19.	Washington Backcountry	2
20.	Crested Butte, CO	94	20.	Grand Teton Nat. Park, WY	1
21.	Solitude, UT	92	20.	Idaho Backcountry	1
22.	Wolf Creek, CO	58	20.	Snowy Range, WY	1
23.	Sugar Bowl, CA	53			
24.	Eaglecrest, AK	47			
25.	Copper Mtn, CO	37			
26.	Monarch, CO	36			
27.	Mission Ridge, WA	32			
28.	Sunlight, CO	30			
29.	Vail, CO	26			
30.	June Mtn, CA	19			
31.	Schweitzer Basin, ID	16			
32.	Heavenly Valley, CA	13			
33.	Aspen Mtn, CO	9			
33.	Beaver Creek, CO	9			
33.	Steamboat, CO	9			
36.	Telluride, CO	6			
37.	Park City/Parkwest, UT	2			
38.	Stevens Pass, WA	1			

APRIL 1985

AREA	SNOWFALL		WATER EQUIVALENT		SNOW DEPTH		TEMPERATURE		WIND SPEED AND DIRECTION	
	TOTAL SNOW- FALL IN.	MAX IN	MAX IN	D OF DAYS	D A MIN AVG	MEAN MIN MAX	MEAN MIN MAX	AVG	AVG FOR MO.	PERIODS FASTEST HOUR
	24	0	24	1	1	1	1	1	1	1
	AVG HR.	A T	HR.	T GE	A T	MIN IN.	MIN IN.	AVG	15	20
	DEN IN.	E	IN.	E 1	2 5	1 0	IN.	E IN.	MPH	MPH DIR.

[illegible]

ALTA, UTAH	33.5	.15	9	1	30.22	1.03	1	8	6	3	1	10.2	1	37	60	50.1	27.9	39.0	20.9	/5	45	68	310
SNOWBIRD, UTAH	27.0	.13	7	22	3.68	1.02	1	8	6	3	1	10.2	1	37	60	50.1	27.9	39.0	20.9	/5	45	68	310

ALPINE MEADOWS, CAL	12.0	.15	5	22	1.83	.82	22	4	4	1	0	37	11	127	131	33.6	17.9	25.8	4.8	3	0	23	140	141
ALYESKA, ALASKA	80.5	.07	21	15	5.00	1.20	15	10	10	6	1	151	16	117	131	33.6	25.1	33.2	11.3	254	54	--	--	--
CRYSTAL MTN 1, WASH	26.2	.07	6	24	3.51	.62	23	9	7	2	0	67	1	50	57	39.3	27.5	32.6	--	--	--	--	--	--
CRYSTAL MTN 2, WASH	37.6	.09	8	24	4.24	.60	24	16	9	2	0	96	1	73	86	39.7	26.8	36.7	16.2	70	56	60	270	3
MT. HOOD MDS, ORE.	44.5	.05	10	23	2.47	.71	23	7	5	1	0	166	1	130	144	46.5	26.6	34.1	7.3	214	64	45	260	--
MT. RAINIER PARADISE	56.0	.11	11	23	8.43	1.48	23	16	12	7	1	191	1	151	165	41.7	26.6	34.1	7.3	04	--	--	--	--
MULTIPLY SKI BLDG, OR	38.0	.07	10	20	3.05	.74	23	6	5	2	0	110	1	64	85	46.1	30.1	38.1	6.3	--	--	--	--	--
SQUAW VALLEY, CALIF	3.5	.07	1	17	.25	.11	19	1	0	0	0	102	1	64	80	64.3	30.6	47.5	--	--	--	--	--	--
STEVENS PASS SE WASH	45.1	.09	10	23	7.40	1.33	24	12	12	5	3	102	1	70	82	44.0	29.5	36.8	--	--	--	--	--	--

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-- DATA INCOMPLETE OR MISSING      RECORD IS MISSING
M-ONE OR MORE DAYS OF RECORD MISSING-IF AVERAGE VALUE IS ENTERED, LESS THAN 10 DAYS
IF M IS ENTERED IN WIND SPEED COLUMN, LESS THAN 37 6-HOUR PERIODS ARE MISSING
GE--GREATER THAN OR EQUAL TO
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RECORD IS MISSING

U.S. FOREST SERVICE
ALPINE SNOW AND AVALANCH RESEARCH PROJECT
RM STATION FORT COLLINS, COLO.

APRIL 1985
AVALANCHE SUMMARY

TOTAL	TOTAL		DATES OF	NUMBER OF DAYS WITH	TYPE OF AVALANCHE		FRACTURE LINE HEIGHTS IN FEET		VERTICAL DESCENT IN FEET					AVALS ACROSS MAJOR ROADS NO.			
	A V A L S	A V A L S			A R T I U R A L D T E	N A T H S O W E S	GE 2 3 4 6	GL 1 2 3 4 6	GE 200 500 1000	GL 1000 1500 2000	MAX FEET						
CENTRAL AND SOUTHERN ROCKY MOUNTAINS																	
ASPEN HIGHLANDS, COL	11	134	5	13	4	8	6	0	0	11	5	2	0	11	6	5 2400	0
ASPEN SNOWMASS, COLO	7	175	5	24	3	24+	3	0	1	6	3	3	2	3	0	0 375	0
BERTHOUD PASS, COLO	13	174	1	23	5	1	6	1	3	10	2	1	1	11	6	0 500	0
BERTHOUD PASS U.S.40	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0
BRECKENRIDGE, COLO	12	108	2	19	3	19+	5	2	12	0	6	6	0	9	0	0 325	0
GOOTHIC, COLO	39	326	1	20	11	11	9	0	0	39	0	3	12	38	31	15 1700	0
LIZARD HD PASS, COLO	1	3	8	8	1	8	1	0	0	1	0	0	0	1	1	1 1800	1
LOVELAND BASIN, COLO	13	95	1	5	6	1	4	3	11	2	6	7	0	9	0	0 275	0
LOVELAND PASS U.S. 6	28	206	1	19	11	5	5	0	4	24	6	16	6	26	11	3 1500	2
RED MTN PASS U.S.50	39	203	1	23	8	11	13	0	3	36	0	1	22	36	32	16 1700	17
SAN JUAN MTS, COLO	7	55	1	8	5	1	3	0	6	1	0	6	5	7	7	6 2500+	4
URAD MNL, COLO	1	31	5	5	1	5	1	0	0	1	0	1	0	1	1	1 1800	0
VAIL, COLO	6	26	11	15	2	15+	4	0	6	0	0	1	0	2	0	0 350	0
INTERMOUNTAIN																	
BRIDGER BOWL, MONT	17	396	2	16	6	16+	5	0	8	9	0	6	7	17	10	5 1100	0
SNOWBIRD, UTAH	25	244	1	23	10	23	6	0	19	6	0	19	1	21	16	5 2200	0
WEST COAST																	
ALPINE MEADOWS, CAL	7	732	21	22	6	22	2	0	6	1	0	7	0	6	0	0 350	0
ALYESKA, ALASKA	46	298	7	29	16	6	5	0	42	4	4	40	0	46	42	15 1500	0
CRYSTAL MTN, WASH	12	301	5	8	6	8	3	0	10	2	0	6	6	12	3	0 800	0
KIRKWOOD MOWS, CAL	7	229	17	17	7	17	1	0	7	0	0	7	0	7	6	0 600	0
MT. HOOD MEADOWS	16	235	19	25	5	25+	3	2	16	0	0	15	0	6	1	0 600	0
MT. RAINIER, WASH	0	30	0	0	0	0	0	1	0	0	0	0	0	0	0	0 0	0
STEVENS PASS U.S. 2	11	139	1	27	4	27	4	0	7	4	0	2	3	9	8	5 1500	2

--DATA INCOMPLETE OR MISSING
GL=GREATER THAN OR EQUAL TO
+=ALSO OCCURRED ON OTHER DATES